

---

Ground Water Quality Technical  
Report No. 10

---

Ground Water Investigation  
of Nitrate and Pesticides in  
Northwest Ada County, Idaho

---

Idaho Division of Environmental Quality  
July 1997

---

**Ground Water Investigation  
of Nitrate and Pesticides in  
Northwest Ada County, Idaho**

Conducted by:  
Gary Bahr, ISDA  
Rob Howarth, DEQ-BRO  
Linda Boyle, DEQ-BRO

Report Prepared by:  
Linda Boyle, DEQ-BRO  
July 1997

## Table of Contents

---

List of Figures and Tables.....	ii
Abstract.....	iii
Introduction.....	1
Purpose and Scope.....	1
Literature Review.....	1
Study Area.....	3
Climate.....	3
Soils.....	3
Geology and Hydrogeology.....	4
Land Use.....	5
Methods and Materials.....	6
Results and Discussion.....	8
Conclusion and Recommendations.....	10
Acknowledgments.....	15
Appendices.....	16
A. Ground Water Sampling Procedures.....	16
B. Quality Assurance and Quality Control.....	18
C. Selected References.....	20

## **List of Figures and Tables**

---

### **Figures**

1.	Northwest Ada County Nitrate and Dacthal Results.....	2
2.	Location of Current Businesses and Agricultural Uses.....	5
3.	Northwest Ada County Wells Sampled in March 1997.....	9
4.	Northwest Ada County March 1997 Nitrate Results.....	11
5.	Northwest Ada County March 1997 Dacthal Results.....	12

### **Tables**

1.	List of VOCs analyzed by the State of Idaho Bureau of Laboratories.....	6
2.	List of Pesticides analyzed by Analytical Sciences Laboratory.....	7
3.	Northwest Ada County March 1997 Sample Results.....	13

## **Abstract**

---

A cooperative ground water study was conducted by the Division of Environmental Quality Boise Regional Office (DEQ) and the Idaho State Department of Agriculture (ISDA) in the northwest Ada County area. In February and March 1997, ten domestic wells were sampled to determine their ground water quality. These ten wells are located in an area of known nitrate and pesticide contamination. The ground water quality of a majority of these wells was unknown by both agencies and it was not known if the well owners were aware of their ground water quality.

Field parameters were measured at each site, prior to collecting samples. All samples were analyzed for total coliform, nutrients, volatile organic compounds, and pesticides. There were four wells with one nutrient, nitrate, with levels greater than 10 mg/l which is the drinking water Maximum Contaminant Level (MCL) and is above the State's Ground Water Standard. Those four wells, also, had detections of pesticide and volatile organic compounds. Three of these impacted wells have depths that are 120 feet deep or less, the depth of the fourth well was thought to be 200-240 feet deep according to the well owner. These wells are receiving ground water from the unconfined, shallow water bearing zone which has known ground water impacts, except, possibly the fourth well.